

Arnold T. Okubo & Associates, Inc.

Doc. 2006-318

Consulting Structural Engineers

94-529 Ukee St., Suite 107

Waipahu, HI 96797

Telephone: (808) 671-5184

FIELD OBSERVATION REPORT

Report No. 01

Emergency Structural Assessment of Earthquake

PROJECT: Damage to Kailua - Kona Wharf @ Kailua - Kona, HI JOB NO.: _____

DATE: October 24, 2006 TIME: 9:00 A.M. WEATHER: Sunny

PERSON PRESENT: Arnold Okubo - Arnold T. Okubo & Associates, Inc.

Alvin Shishido - ATO, Inc.

Greg West - ATO, Inc.

OBSERVATION:

Above Water Inspection: There many cracks caused by the earthquake throughout the wharf decks concrete slab, pile caps, stairways, walls, boat ramps, and A.C. pavements. The crack's width varies up to 1/8" in width. Cracks will need to be repaired to prevent future corrosion of the reinforcing bars and sheet pile bulkhead, also differential settlement, trip hazard, and future deterioration of the structure.


Underwater Inspection: Steel sheet pile bulkhead in good condition along the length of the wharf where a new sheet pile bulkhead was installed about 2 years ago. There are vertical cracks at the concrete cap that protects the steel sheet pile from corrosion. Cracks at pile caps are at numerous locations. Some surface rust scales that develop on the sheet pile surface had separated/delaminated from the surface of the sheet pile probably due to the bending and movement of the sheet pile during the earthquake.

Copies To:

Carty Chang: DLNR DBOR

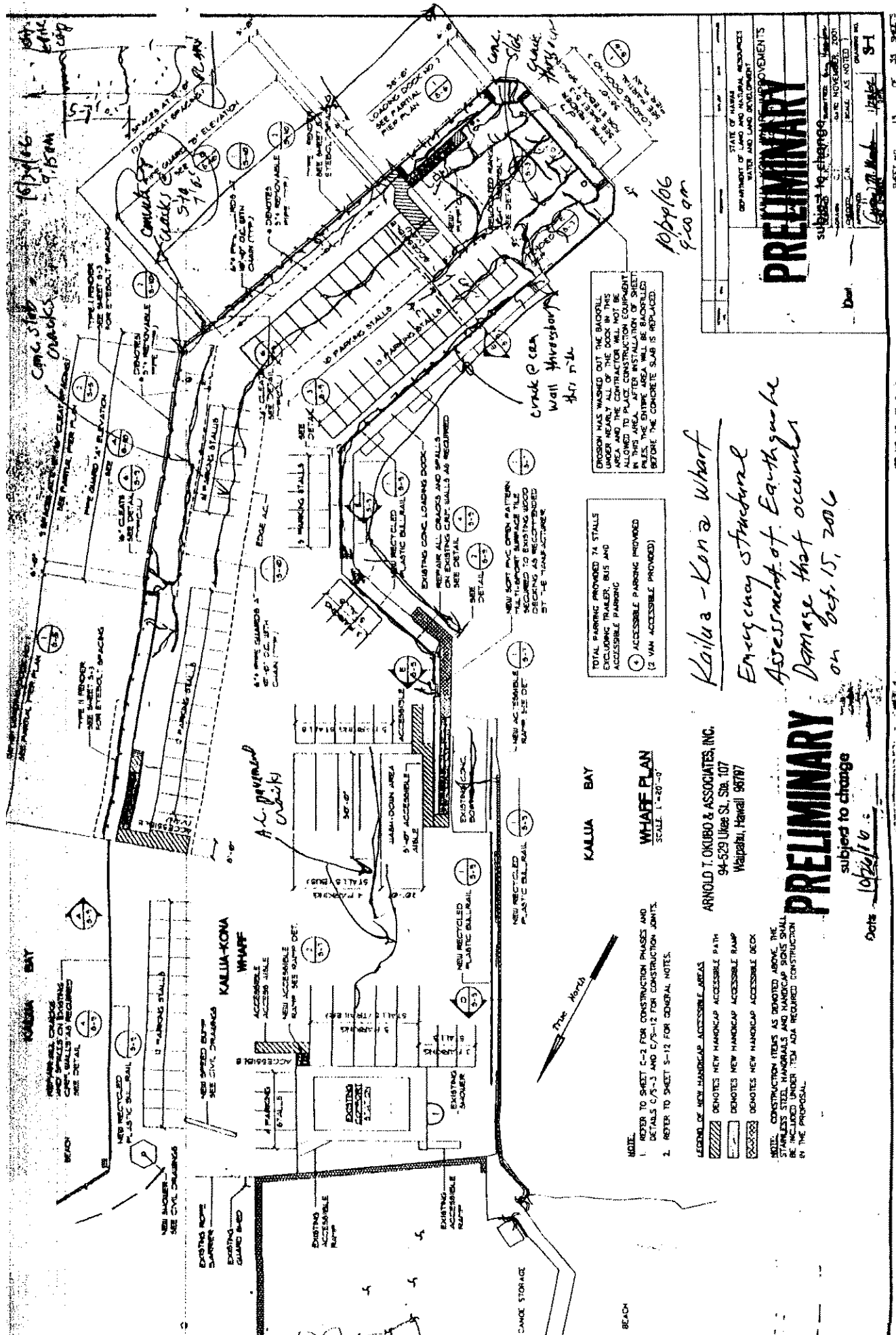
10/26/06

OBSERVED BY:



Name:

Date: 10/25/06



ARNOLD T. OKUBO & ASSOCIATES, INC.
94-529 Ulukou St. Sta. 107
Waipahu, Hawaii 96797

PRELIMINARY
subject to change

Date 10/26/06

Kailua-Kona Wharf

Emergency structural

Assessment of Earthquake

Damage that occurred

on Oct. 15, 2006

PRELIMINARY
subject to change

DATE NOVEMBER 2006
SCALE AS NOTED
SHEET NO. 13 OF 35 SHEETS

DATE NOVEMBER 2006
SCALE AS NOTED
SHEET NO. 13 OF 35 SHEETS

JOB NO. 06-08-2

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Doc. 2006-317

FIELD OBSERVATION REPORTReport No. 01

PROJECT: Emergency Structural Assessment of Earthquake
Damage @ Kawaihae Small Boat Harbor JOB NO.: _____

DATE: October 24, 2006 TIME: 3:00 P.M. WEATHER: Sunny / Vog

PERSON PRESENT: A. Okubo - Arnold T. Okubo & Associates, Inc.

A. Shishido - ATO, Inc.G. West - ATO, Inc.B. Rochealeu - ATO, Inc.OBSERVATION:

Above Water Inspection: Wooden pier deck already off limits due to previous damage from wave damage. The writer had inspected the wooded pier previously on March 2, 2006 and the wooden pier deck structural condition has not change due to the earthquake. The landside concrete slab walkway have cracks caused by the earthquake. The rock revetment slope protection has shifted along the wooden pier. The grounds at the pier has moved a few inches and created a crack in the ground.

Loading Dock: Okay no damage.

Boat Ramps & Pavement: There are several cracks thru out caused by the earthquake.

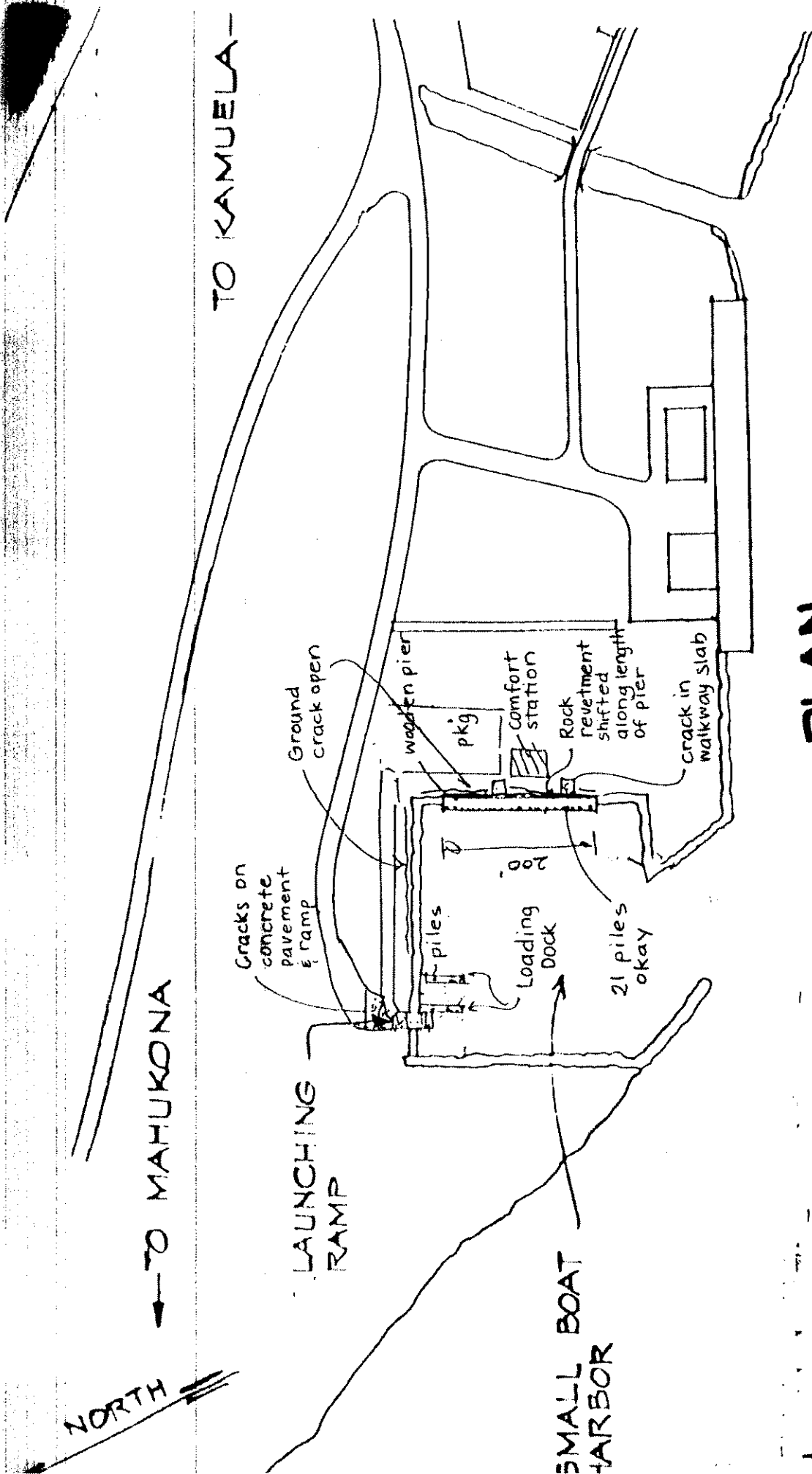
Underwater Inspection: The existing 10"Ø steel pipe piles are in fair condition with no damage from the earthquake. The loading dock piles are in fair condition with no damage.

Copies To:

Carty Chang: DLNR DBOR10/26/06

OBSERVED BY:

Name: Date: 10/25/06



PLAN
NO SCALE

KAWAIIHAE HARBOR

SMALL BOAT
HARBOR